

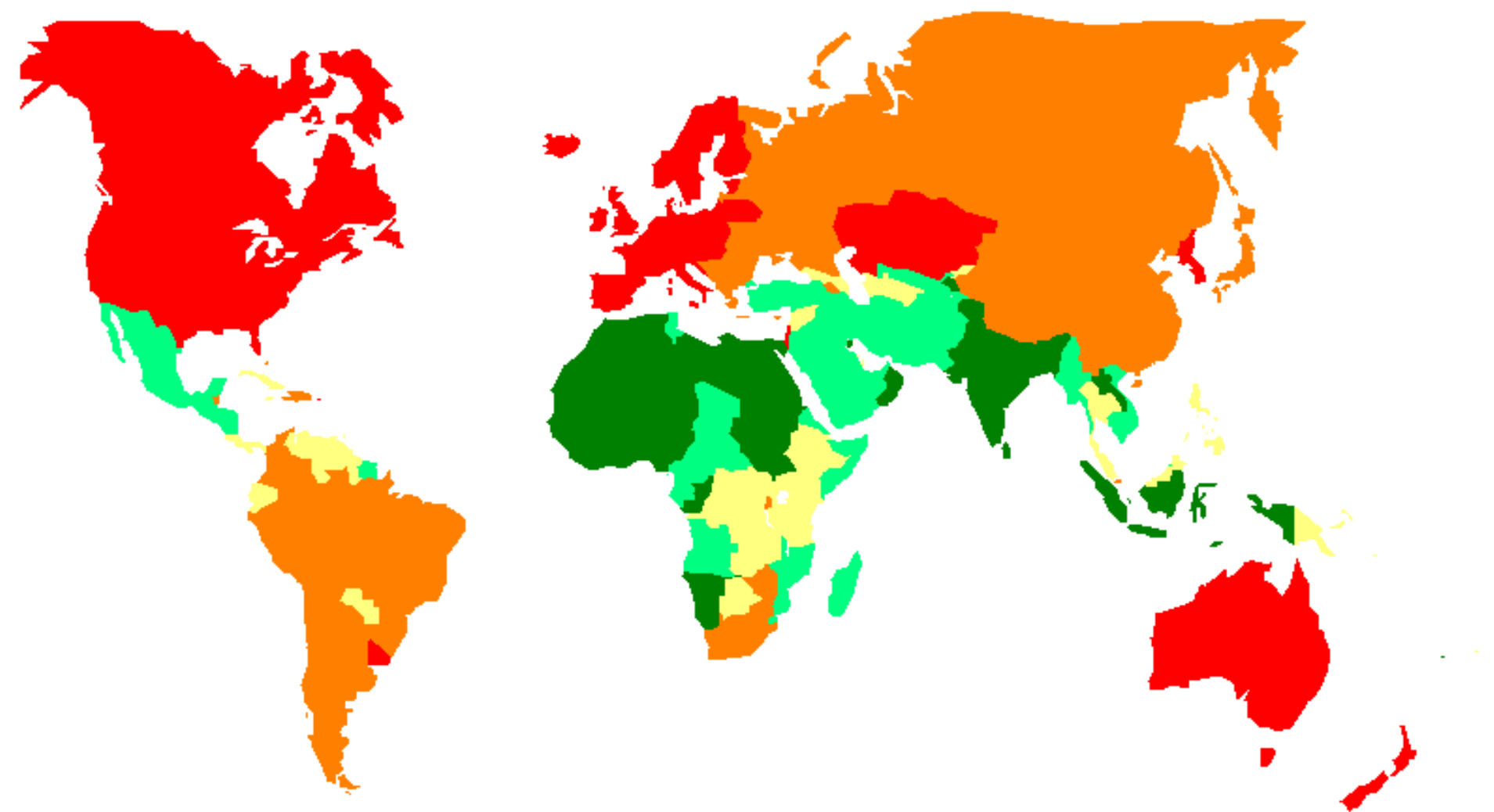
# Cancer in the Arab World: Magnitude of the Problem

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UICC  
March 21-25  
2005

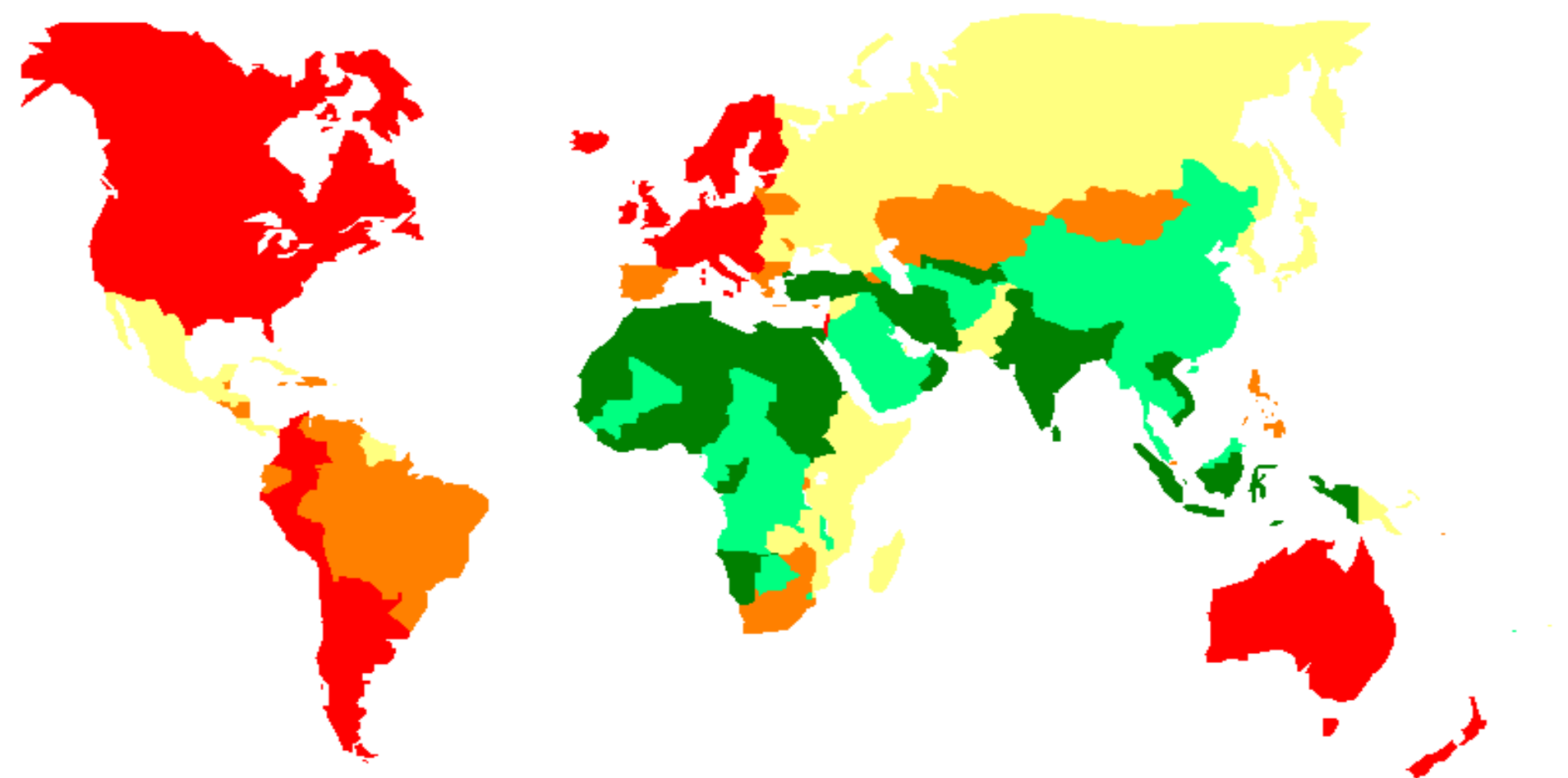
All sites but non-melanoma skin, Males  
Age-Standardized incidence rate per 100,000



Dark Green < 108.9    Light Green < 146.1    Yellow < 190.8    Orange < 261.5    Red < 406.6

GLOBOCAN 2002, IARC

All sites but non-melanoma skin, Females  
Age-Standardized incidence rate per 100,000



■ < 110.0   ■ < 145.0   ■ < 167.4   ■ < 205.4   ■ < 308.8

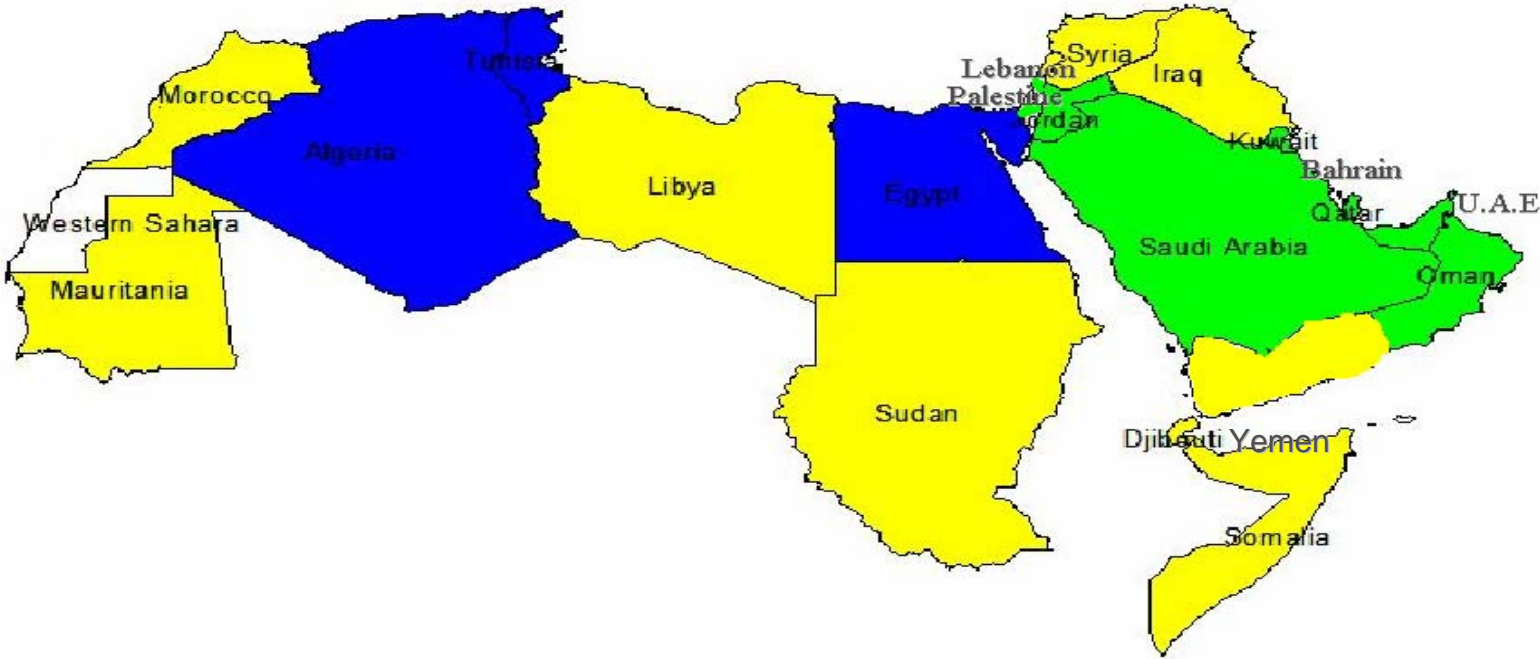
GLOBOCAN 2002, IARC




# Introduction

**Cancer incidence in Arab countries is increasing. This is due partly to:**

- **Reduction in the incidence of infectious diseases**
- **Increase in the population average age**
- **Westernization of social and dietary habits**
- **Increase smoking**
- **Increase of the incidence of hepatitis B and C**
- **Wrong use of plastic materials, pesticides and insecticides**
- **Low socioeconomic status**

# Cancer Databases in Arab World

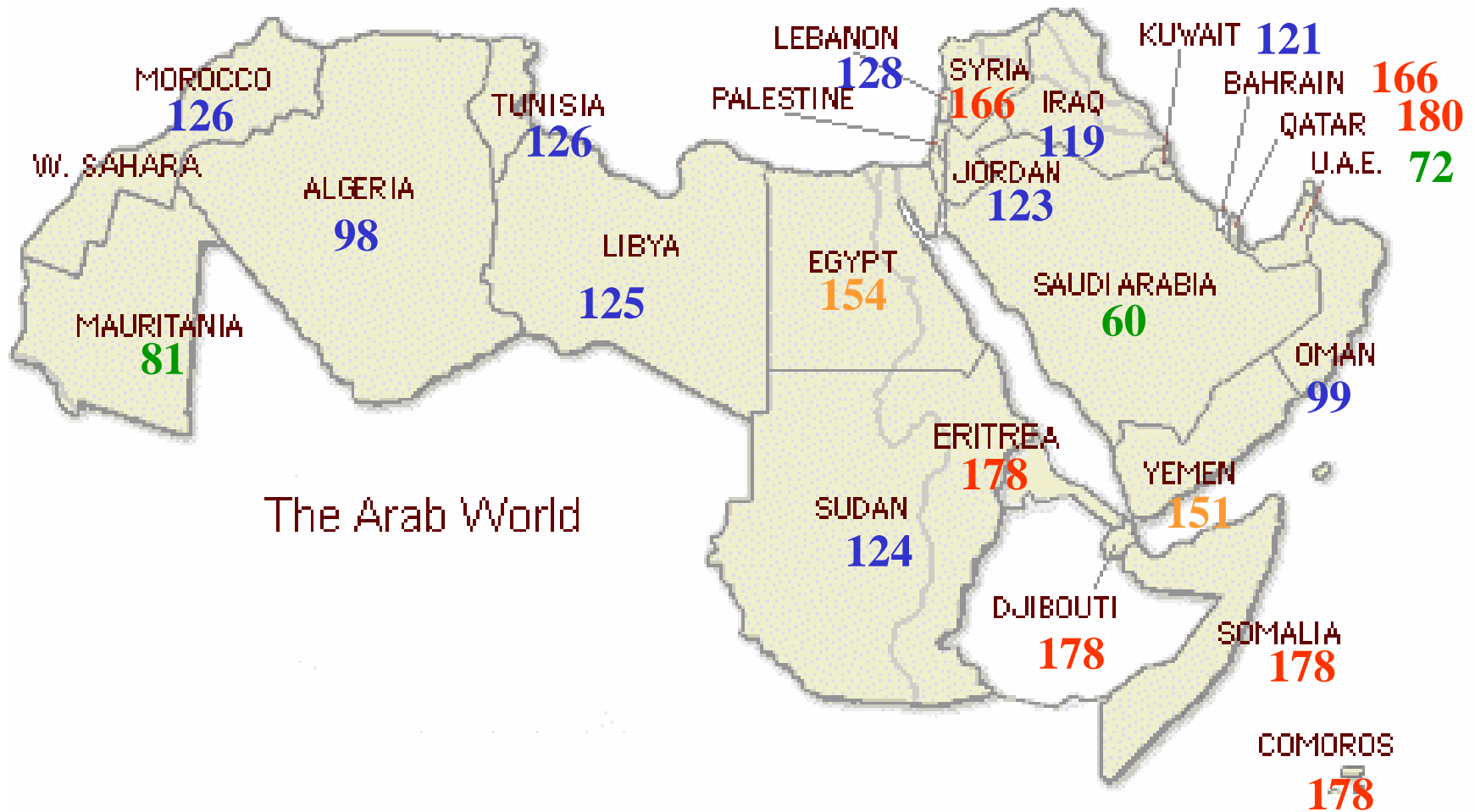


-  National Cancer Registry
-  Regional Cancer Registry
-  No Registry

# Source of Data

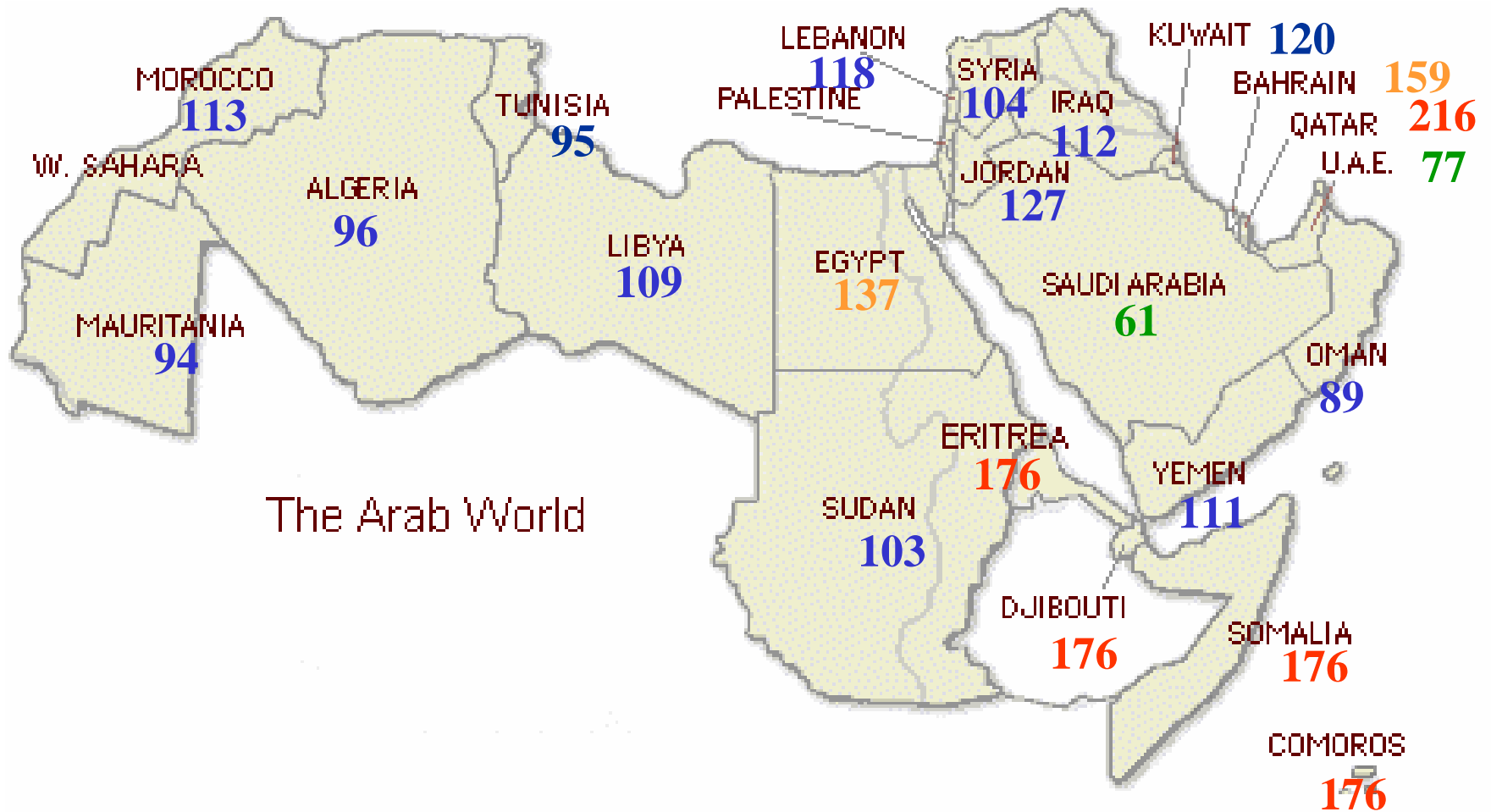
- National Population-based Cancer Registries:
  - Gulf Center for Cancer Registration, 2000
    - Qatar, Oman, Bahrain, and UAE
  - Saudi Arabia, 1999-2000
  - Kuwait, 2001
  - Jordan, 1999
  - Lebanon, Cancer Program-Tumor Registry, 1998
- Regional Population-based Cancer Registries:
  - Egypt: Gharbiah 1999, NCI 2003
  - Algeria: Algiers, Constantine, Oran, &Setif, Globocan 2002
  - Tunisia: Tunis, Sousse, Sfax, Globocan 2002
- All others Globocan 2002, IARC

# Age-Adjusted Incidence Rates in Arab World, Males



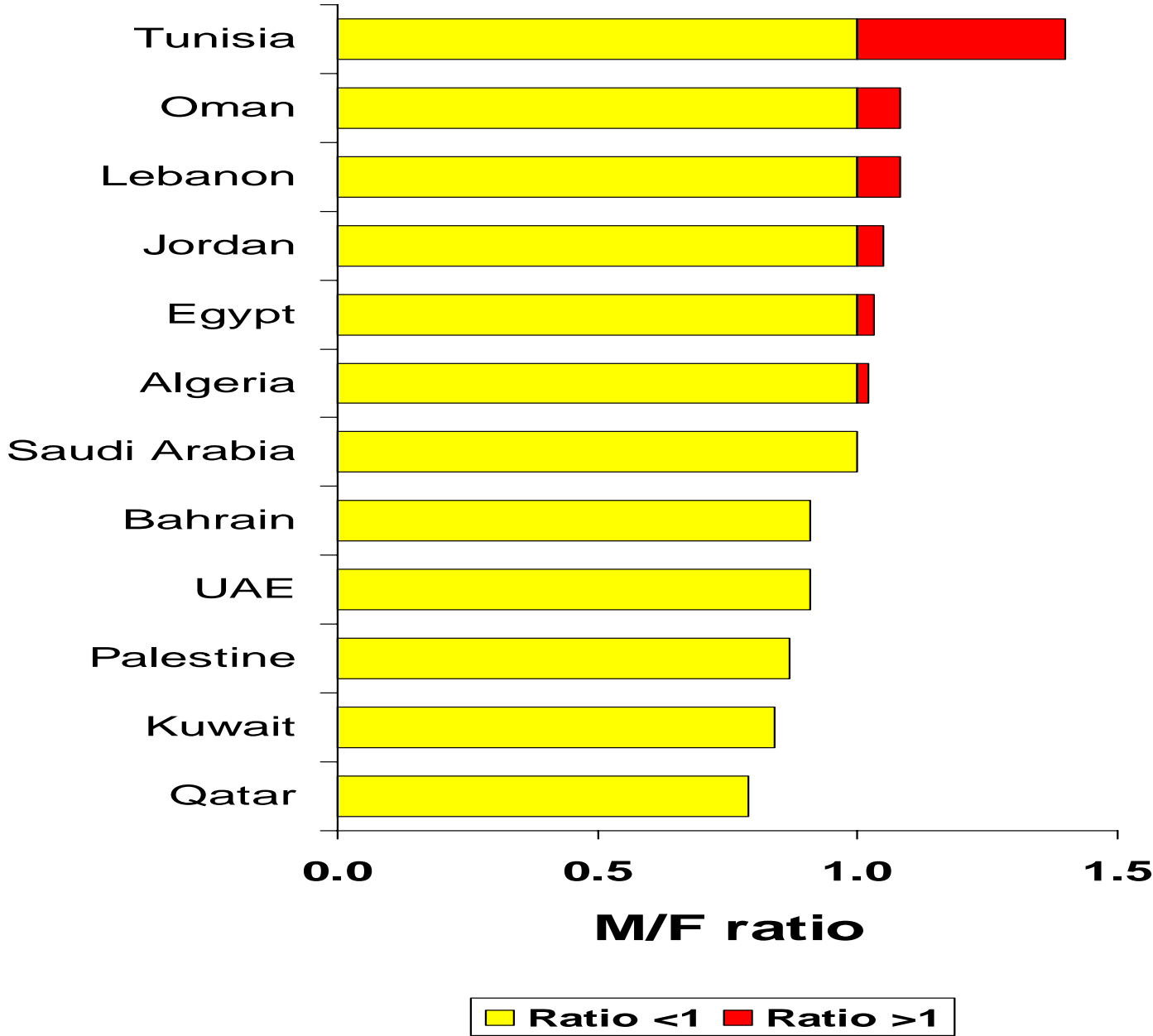
Rates/100,000

# Age-Adjusted Incidence Rates in Arab World, Females



Rates/100,000

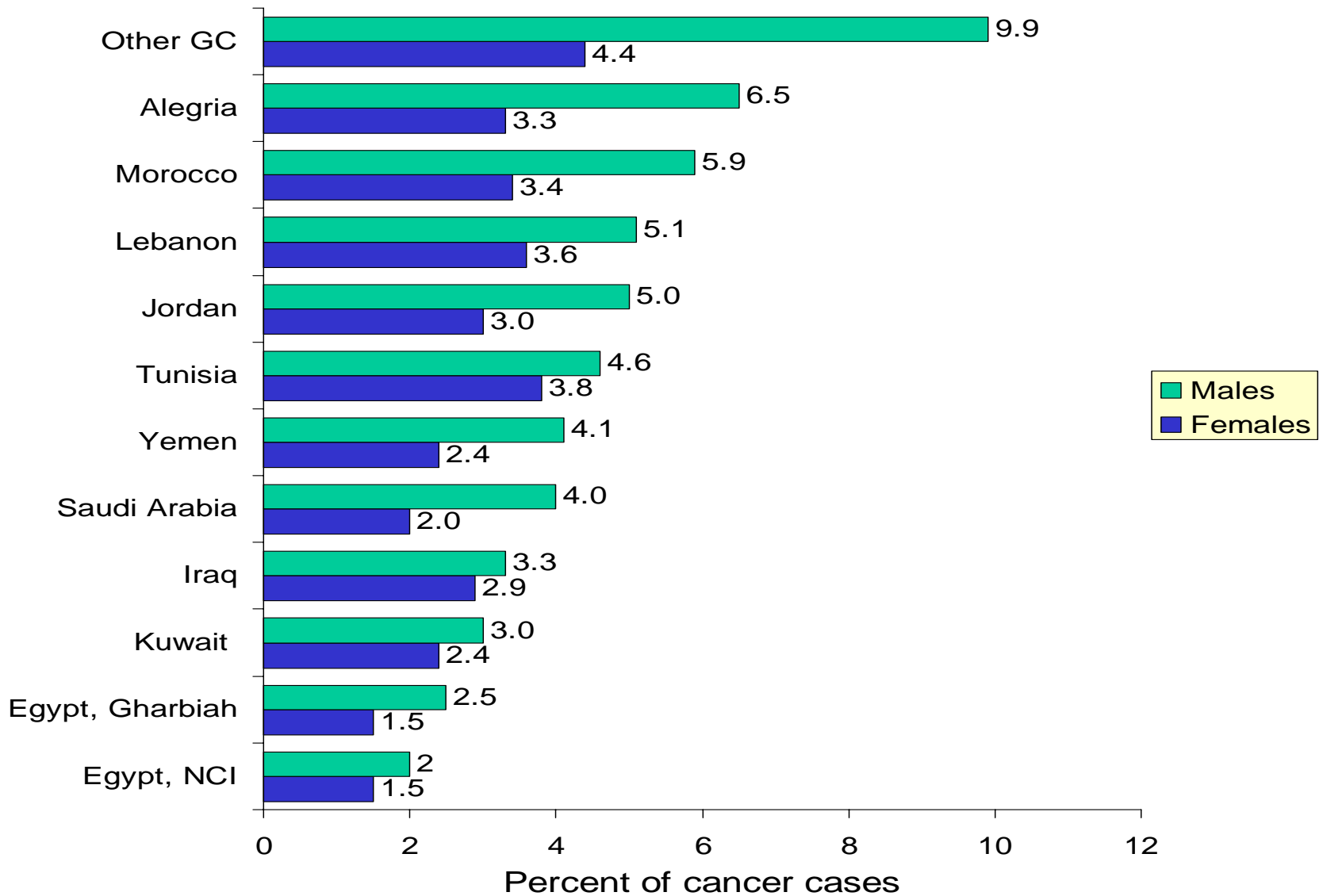
# Male to Female Ratio, All Cancer Sites



# Digestive System Malignancies Worldwide

- Stomach cancer is the 3rd most common cancer site for males and 5<sup>th</sup> for females. It accounts for about 9% of all cancer worldwide. Stomach cancer is much more common in certain Asian, Central European, Central American, and South American countries, especially Japan, Chile, Costa Rica, Hungary, and Poland. It is the leading cause of cancer death in many of these countries and is a major cause of cancer death worldwide.
- Colorectal cancer is the 4rd most common cancer site for males and 3rd for females. It constitutes 9.4% of all cancer worldwide.
- Liver cancer is the 5th most common cancer site for males and 8th for females. It accounts for just under 6% of all cancer worldwide. This cancer is many times more common in developing countries in Africa and East Asia than in the United States. In many of these countries it is the most common type of cancer.

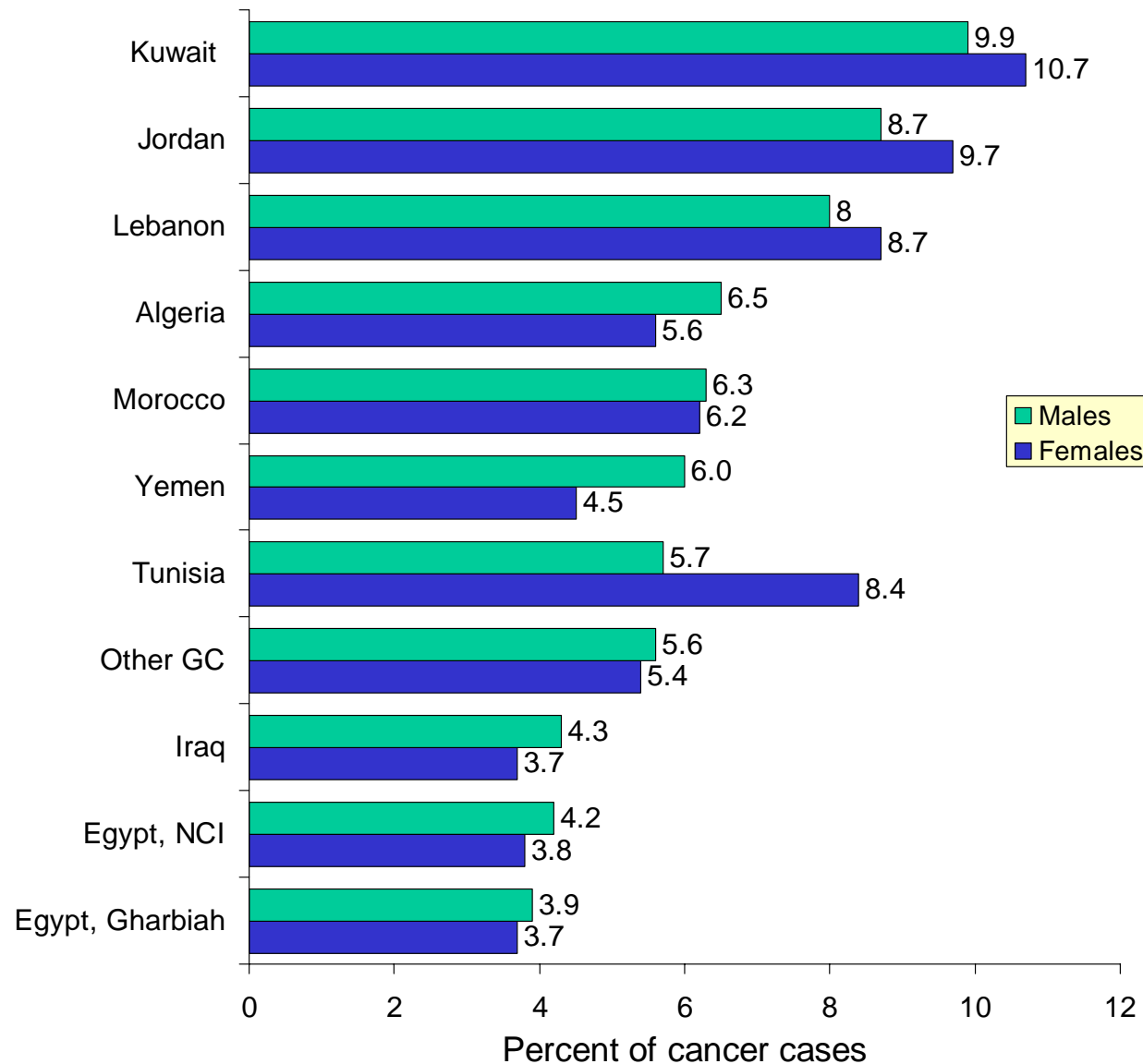
# Frequency of Stomach Cancer in Arab World



## Median Age of Stomach Cancer Cases in Selected Arab Countries

Country	Males
Egypt (NCI)	54.0
Egypt (Gharbiah)	55.9
Saudi Arabia	67.0
Jordan	60.0

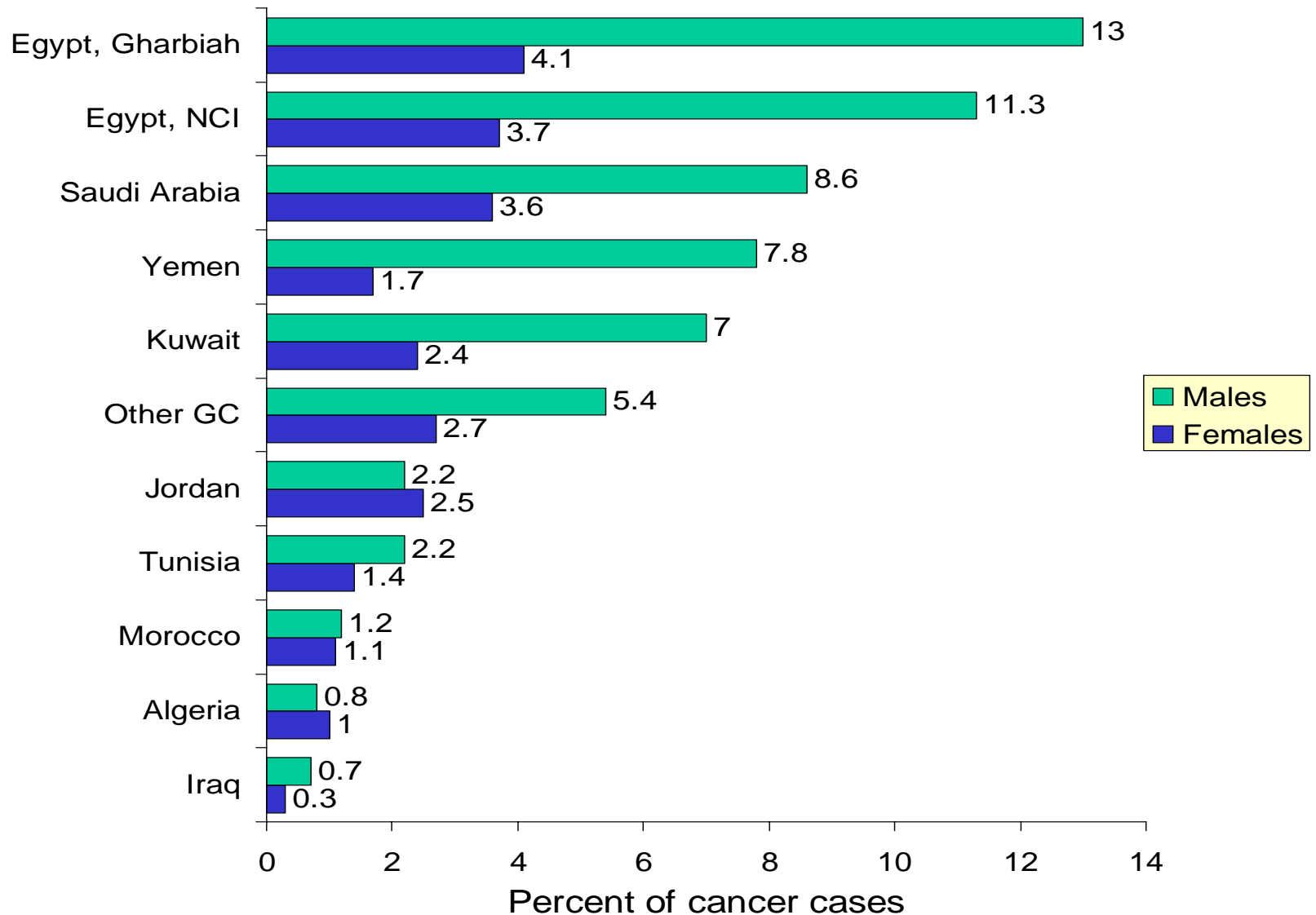
# Frequency of Colorectal Cancer in Arab World



# Median Age of Colorectal Cancer Cases in Selected Arab Countries

Country	Males	Females
Egypt (NCI)	48.0	48.0
Egypt (Gharbiah)	48.1	49.5
Saudi Arabia	59.9	56.4
Jordan	57.6	53.4
Kuwait	63.5	53.3

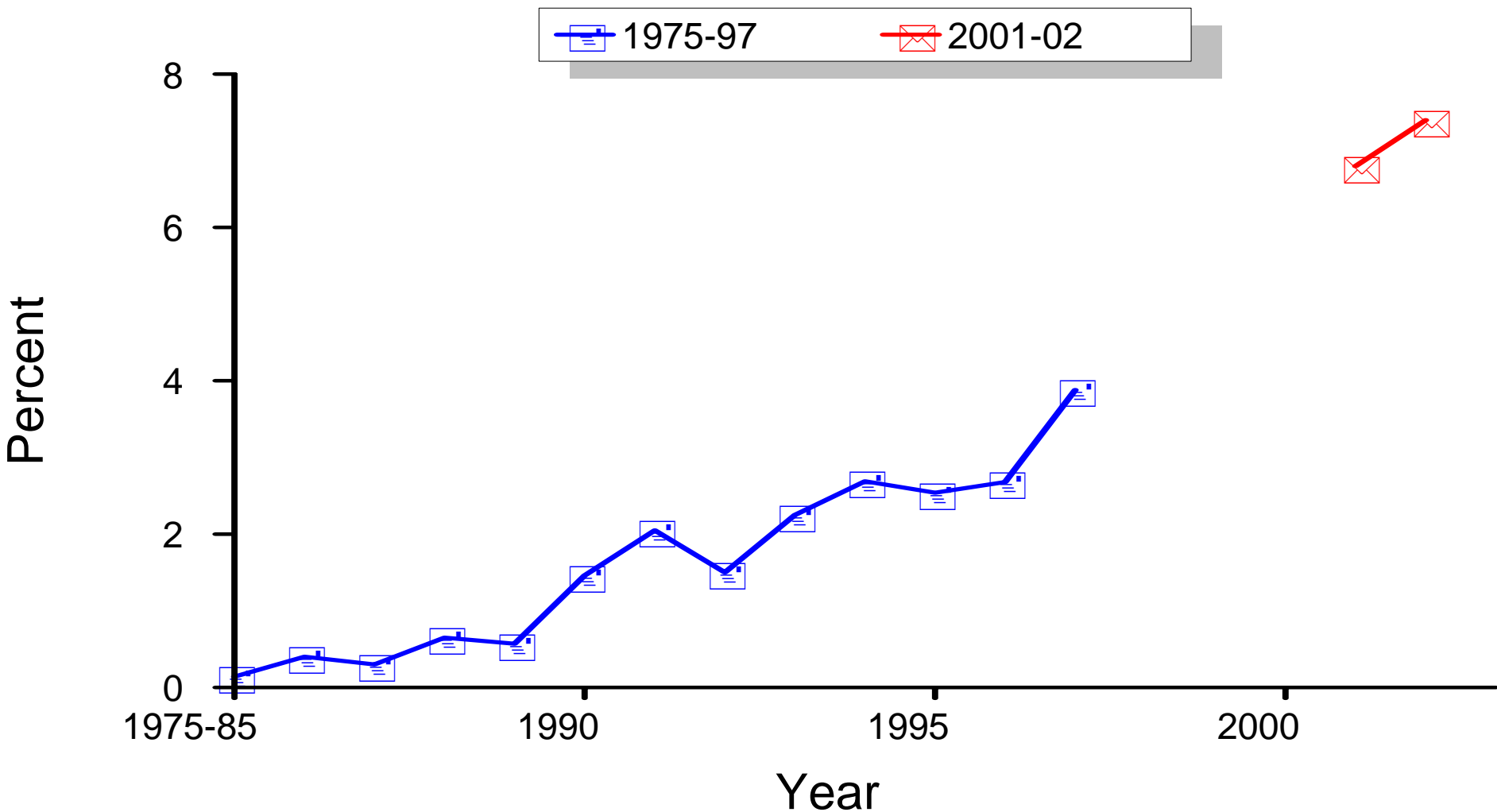
# Frequency of Liver Cancer in Arab World



# Median Age of Liver Cancer Cases in Selected Arab Countries

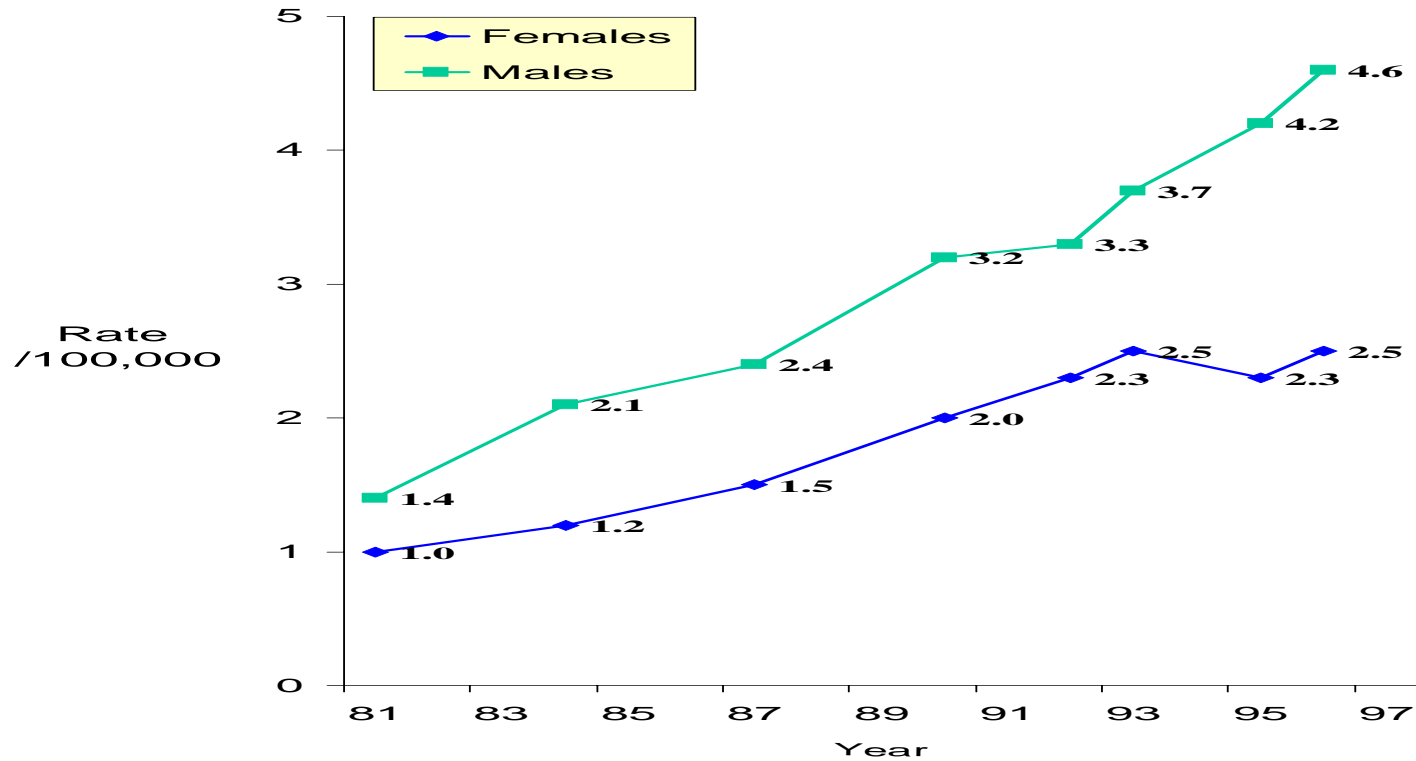
Country	Males
Egypt (NCI)	58.0
Egypt (Gharbiah)	59.8
Saudi Arabia	66.6
Jordan	57.0

# Relative Frequency of Liver Cancer, NCI - Egypt 1975-2002



# Trend of HCC Mortality in Egypt, 1981-1996

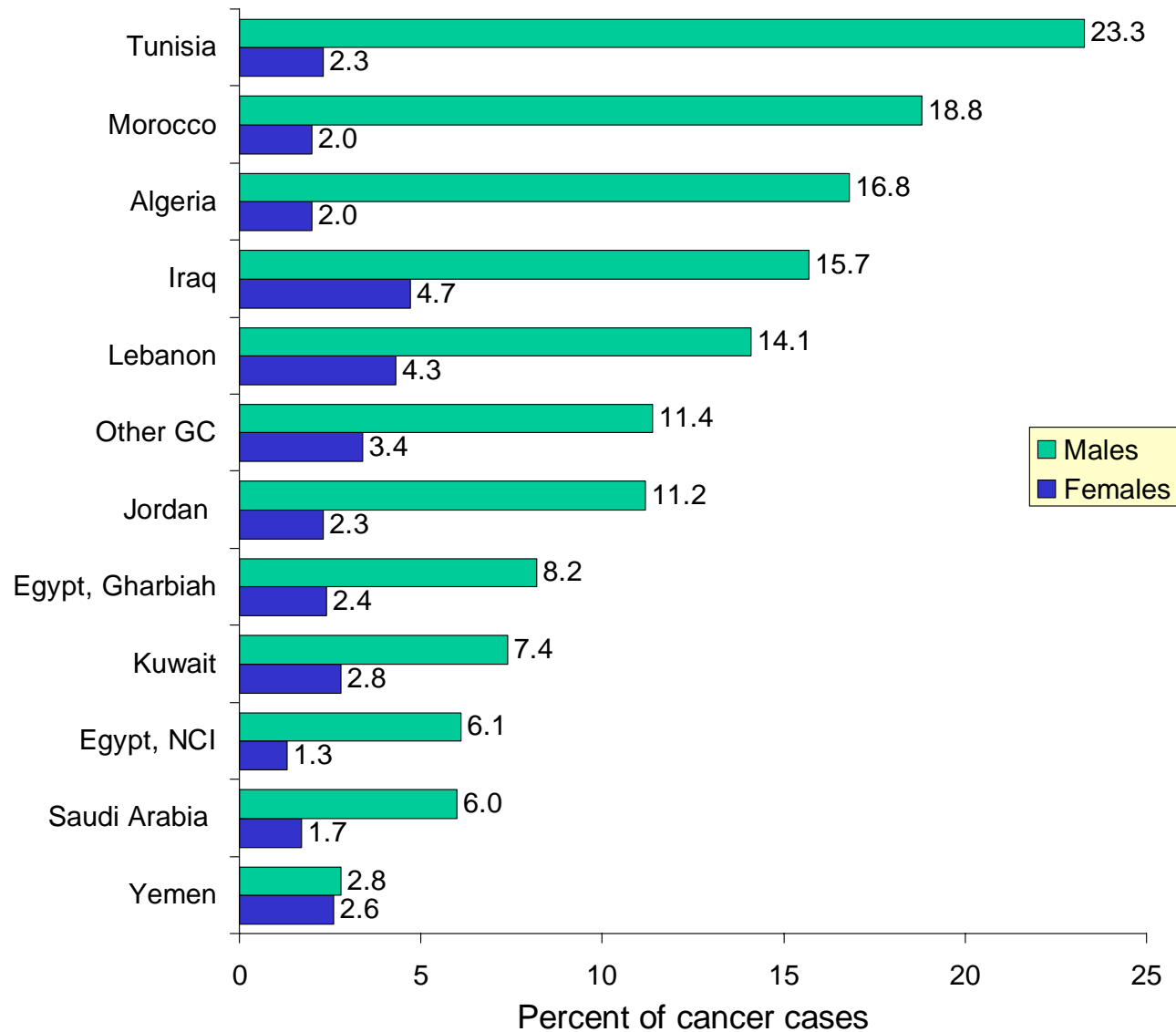
(Mostafa K. Mohamed & El-Said A. Aoun, 2002)



# Lung Cancer

- Lung cancer was rare at the beginning of the century
- Now it is the most frequent cancer in the world
- Global incidence of lung cancer is increasing at 0.5% per year
- A major contribution to this trend comes from the East European and developing countries
- Cancer will remain a major cause of worldwide cancer deaths in the 21th century

# Frequency of Lung Cancer in Arab World



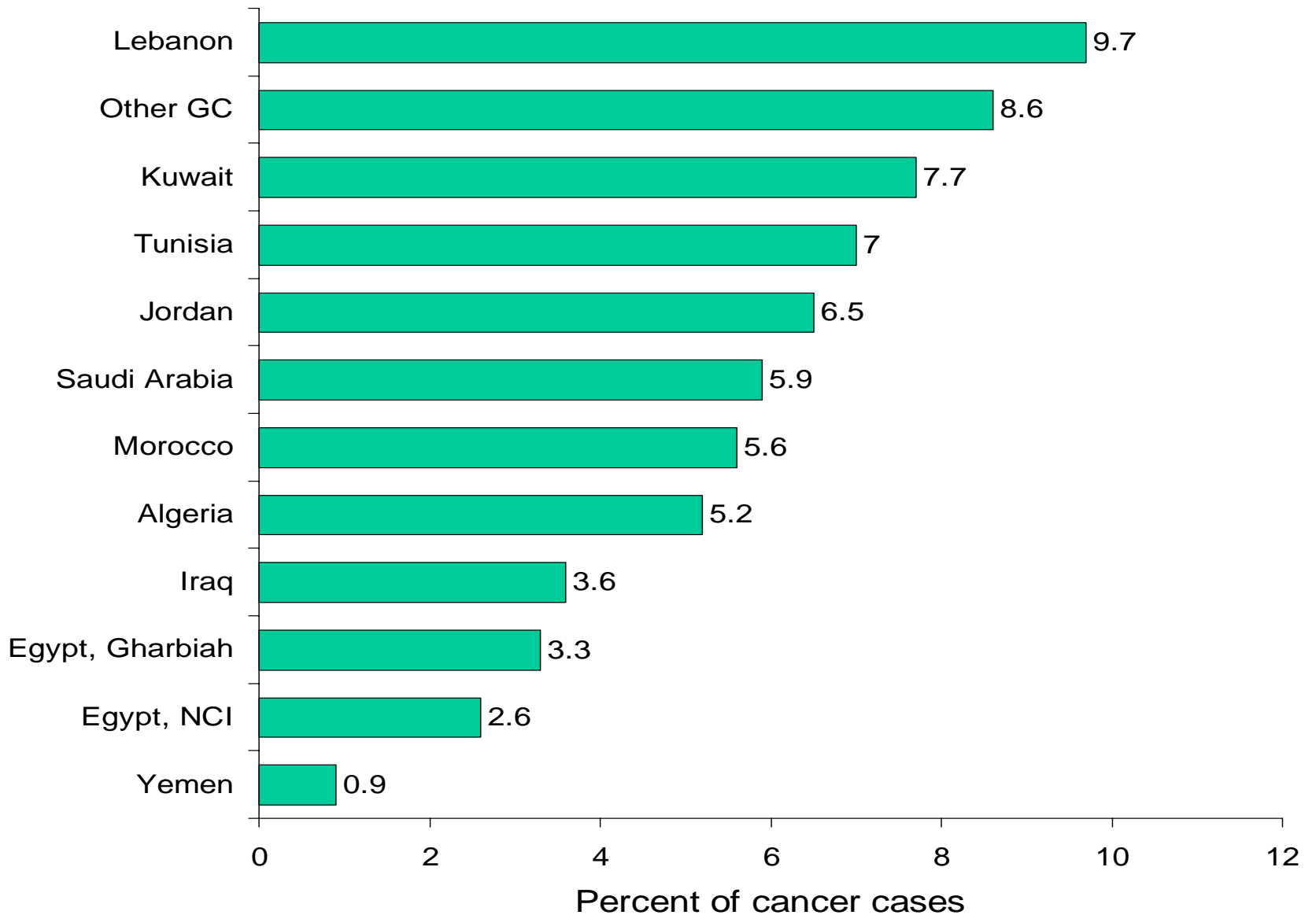
## Age of Lung Cancer Male Cases in Selected Arab World

Country	Median (years)	% <45 years
Egypt (NCI)	60.0	12.1
Egypt (Gharbiah)	62.5	6.3
Saudi Arabia	65.8	6.6
Kuwait	70.0	5.0
Jordan	63.2	7.5
Bahrain	69.5	0.0
Oman	61.2	2.7
USA	70.0	3.0

## Male Genital Worldwide

- Prostate cancer is the 3rd most common cancer site for males after lung and stomach cancer. It accounts for 10% of all cancer worldwide.
- Testicular cancer is not common. It constitutes nearly 1% of all cancer in males.

# Frequency of Prostate Cancer in Arab World



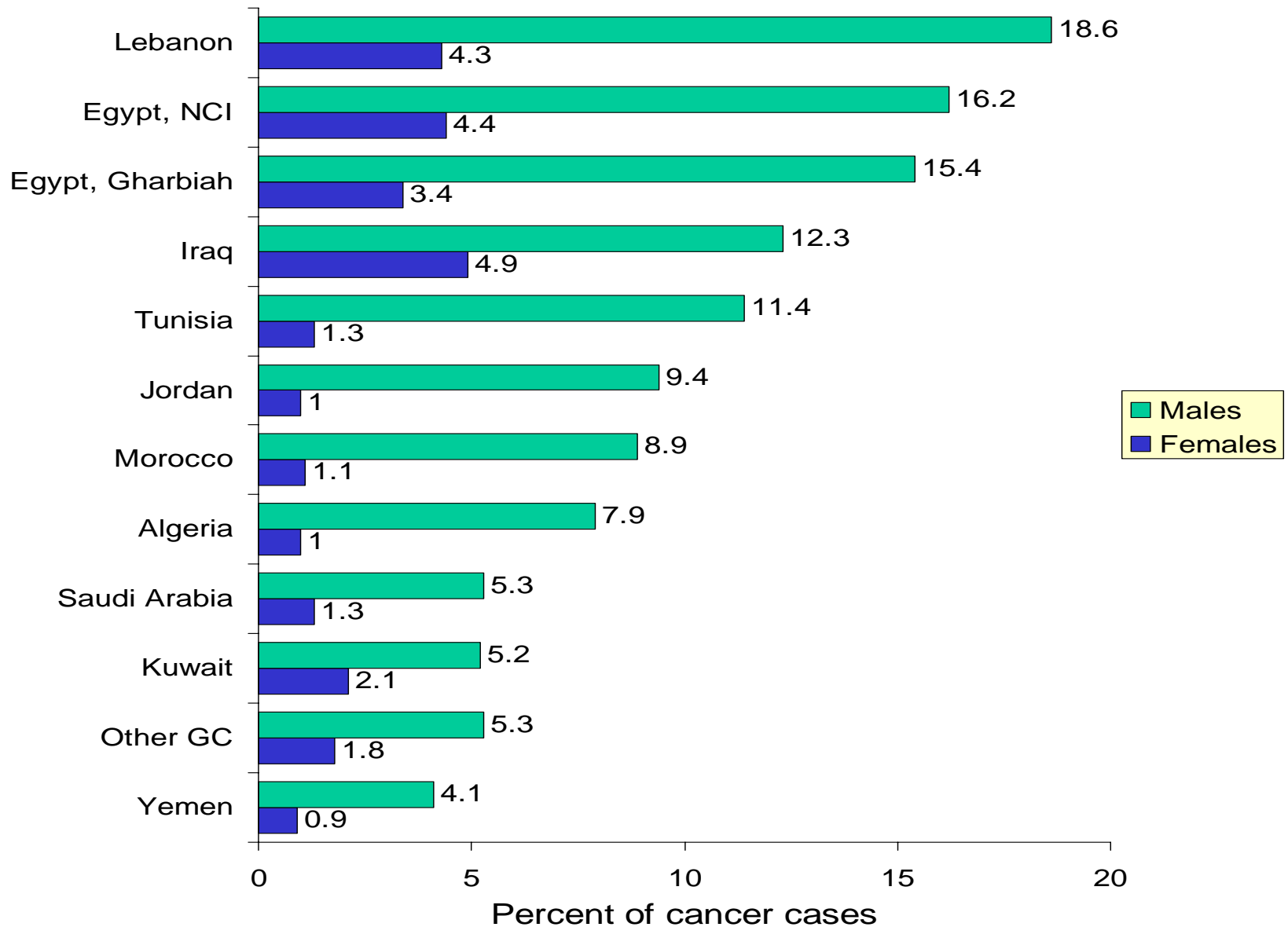
# Age of Prostate Cancer Cases in Selected Arab Countries

Country	Males
Egypt (NCI)	69.0
Egypt (Gharbiah)	67.3
Saudi Arabia	72.8
Jordan	70.0

## Urinary tract Worldwide

- Urinary bladder cancer is the 9<sup>th</sup> most frequent it accounts for 3.3% of the newly diagnosed cancer cases and 2.1% of cancer deaths. Men get bladder cancer at a rate 2 to 3 times greater than women.
- Cancer of the kidney is not very common, it constitutes 1.9% of all cancer. Men have a slightly higher incidence than women (male to female ratio 1.6)

# Frequency of Bladder Cancer in Arab World



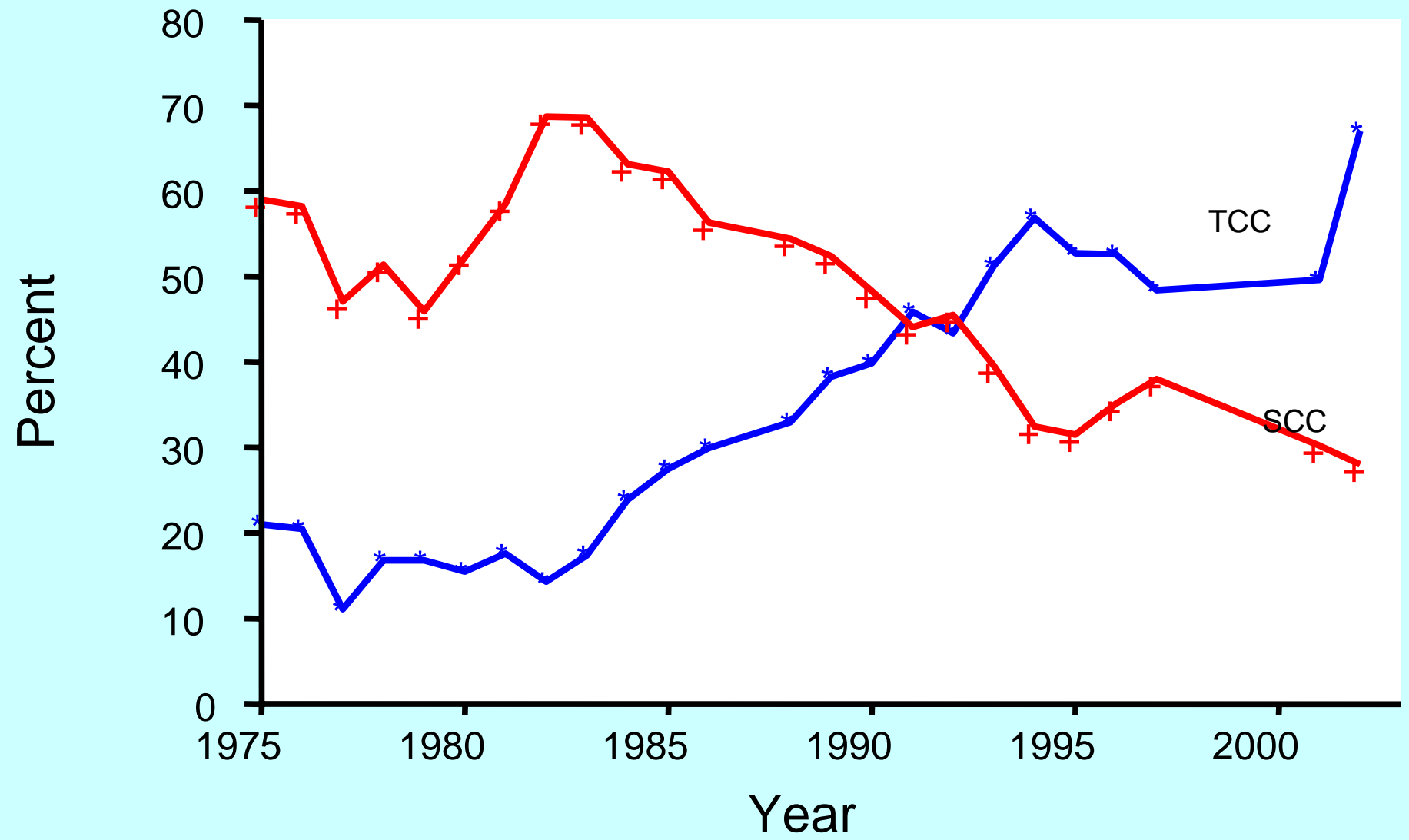
# Age of Bladder Cancer Male Cases in Selected Arab Countries

Country	Median (years)
Egypt (NCI)	60.0
Egypt (Gharbiah)	61.2
Saudi Arabia	63.1
Jordan	62.9
USA	72.0

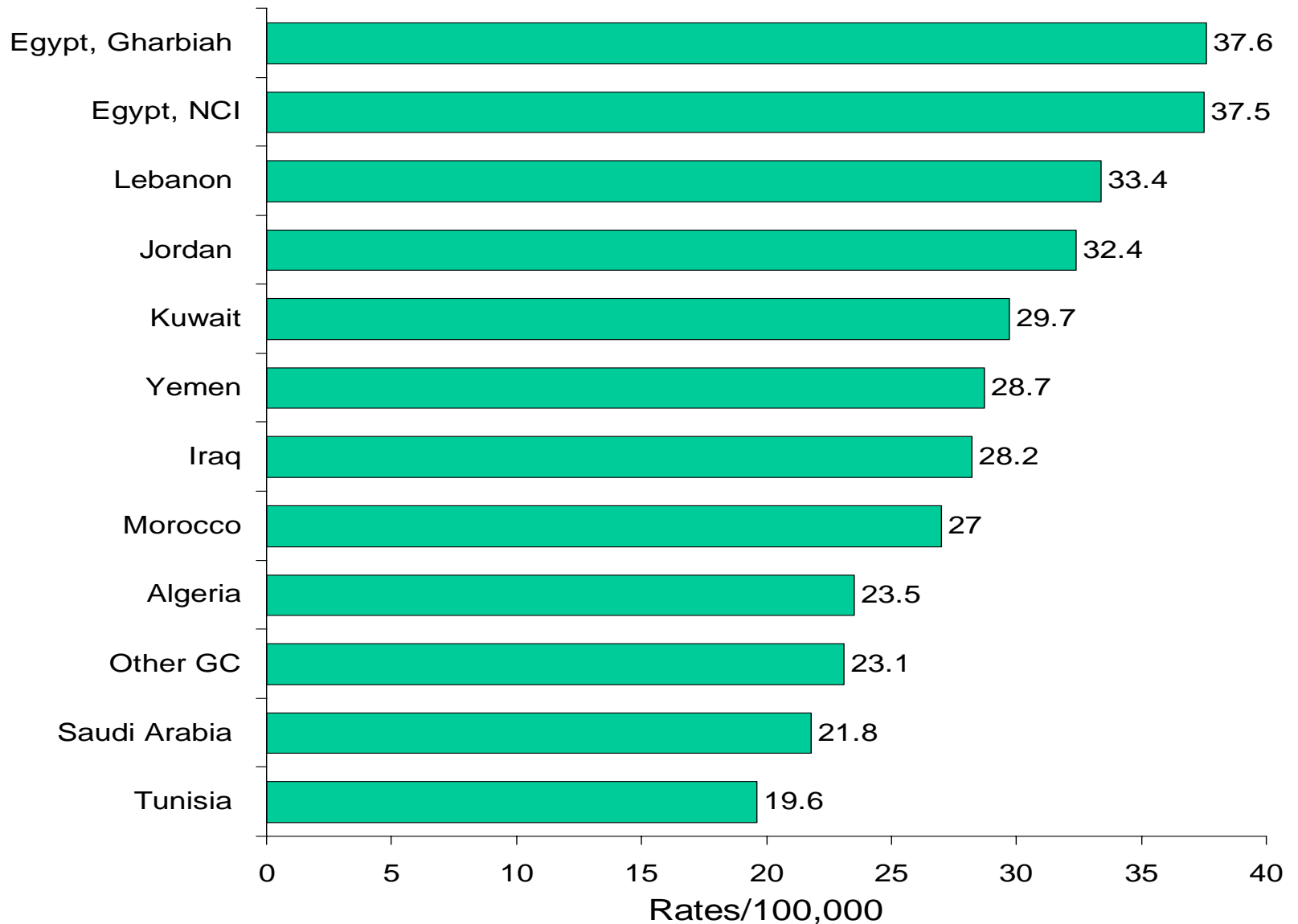
# Histological Type of Bladder Cancer

- **The first differential pattern which characterizes bilharzial bladder cancer is the histological type of the tumor**
- **SCC type is the most frequent type of cancer in countries with a high prevalence of schistosomiasis**
- **SCC type is rare in industrialized countries**
- **TCC type is considered typical for chemically induced bladder cancer**
- **TCC type is low in areas with schistosomiasis**

# Changing Pattern of Bladder Cancer Type, NCI 1975-2002



# Frequency of Breast Cancer in Arab World (Females)



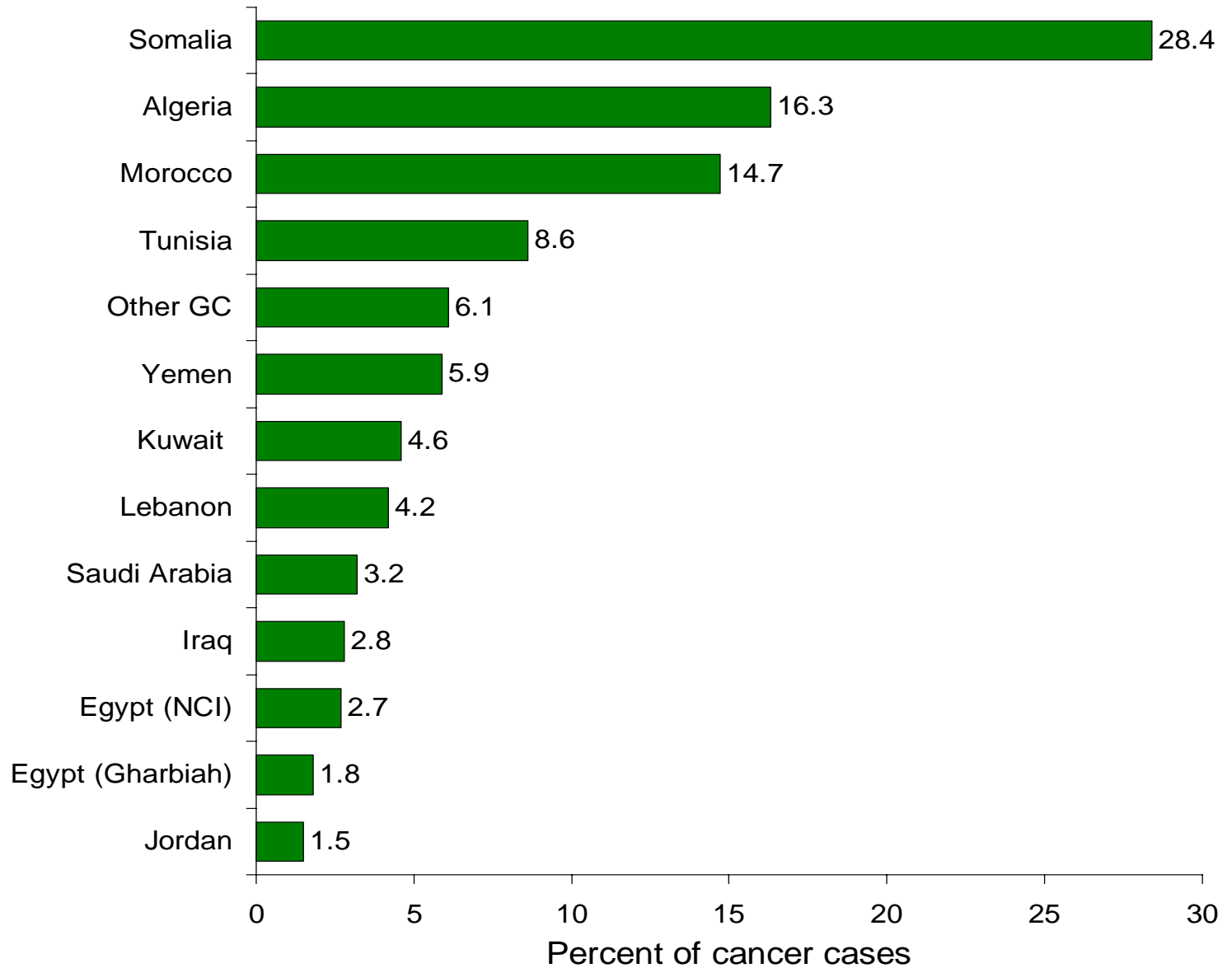
## Age of Breast Cancer Female Cases in Selected Arab World

Country	Median (years)
Egypt (NCI)	49.0
Egypt (Gharbiah)	48.7
Saudi Arabia	47.0
Kuwait	49.6
Jordan	51.2
Bahrain	47.6
Oman	46.4
Lebanon	48.7

# Female Genital Malignancies Worldwide

- Cervical cancer is the 2nd most common cancer site for females after breast cancer. It accounts for 10% of all cancer worldwide.
- Ovarian cancer is the 6th most common cancer site for females. It constitutes 4% of all cancer in females.
- Uterine cancer is the 7th most common cancer site for females. It constitutes nearly 4% of all cancer in females.

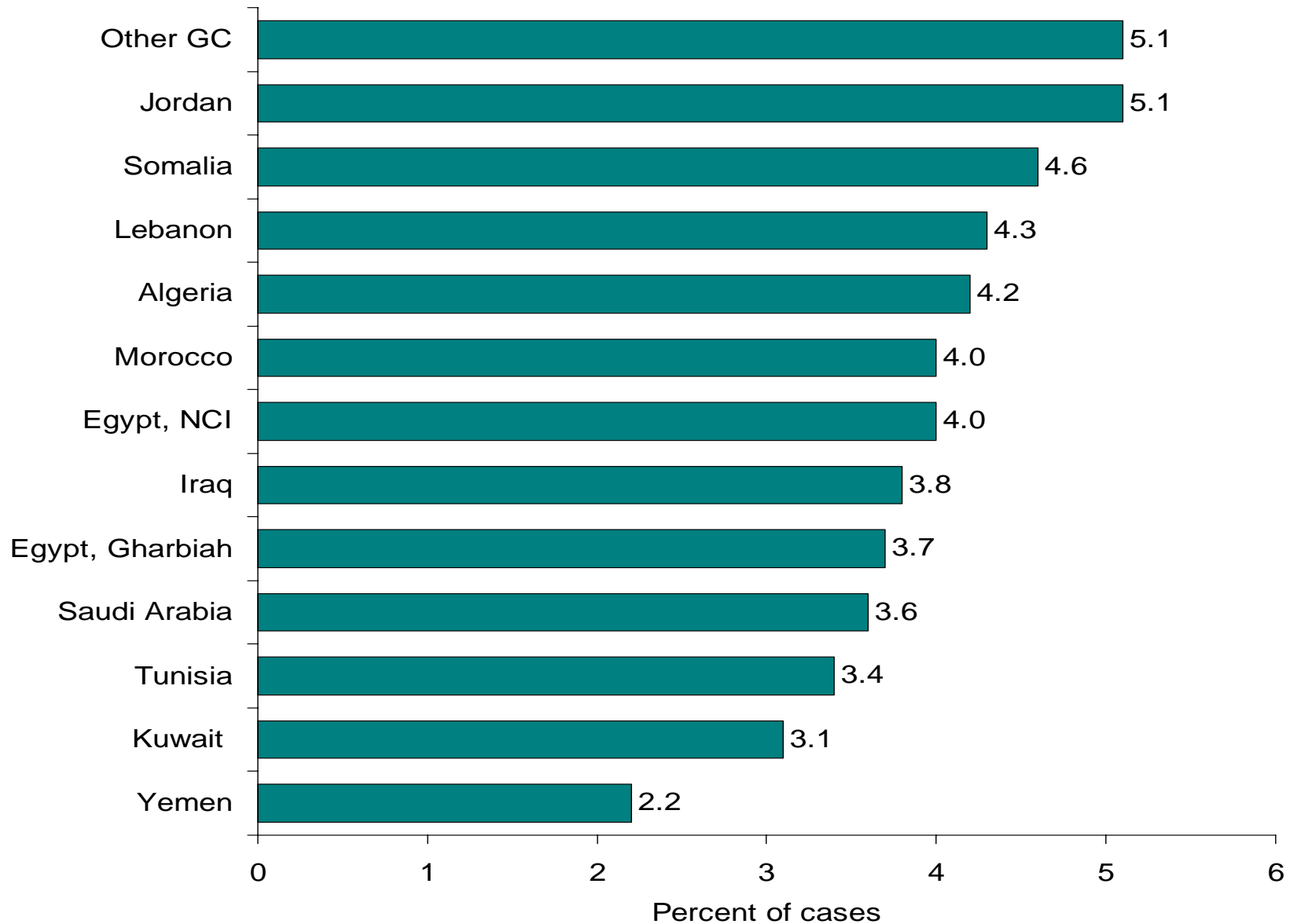
# Frequency of Cervical Cancer in Arab World



## Age of Cervical Cancer Cases in Selected Arab World

Country	Median (years)
Egypt (NCI)	52.0
Egypt (Gharbiah)	61.2
Saudi Arabia	51.3
Kuwait	54.0
Jordan	42.0
Oman	56.2

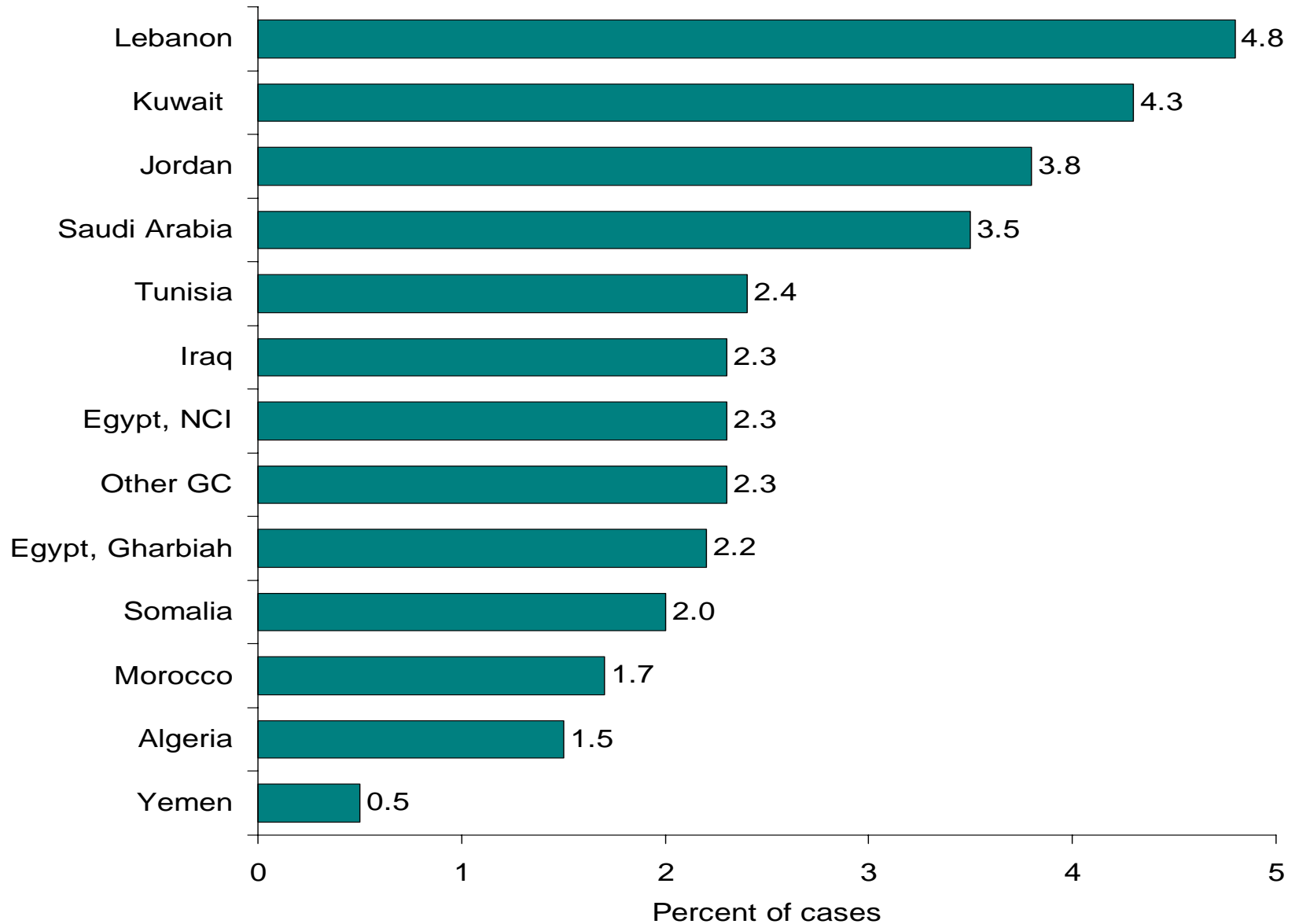
# Frequency of Ovarian Cancer in Arab World



## Age of Ovarian Cancer Cases In Selected Arab World

Country	Median (years)
Egypt (NCI)	48.0
Egypt (Gharbiah)	52.0
Saudi Arabia	49.5
Kuwait	57.0
Jordan	52.0
Oman	52.8

# Frequency of Uterine Cancer in Arab World



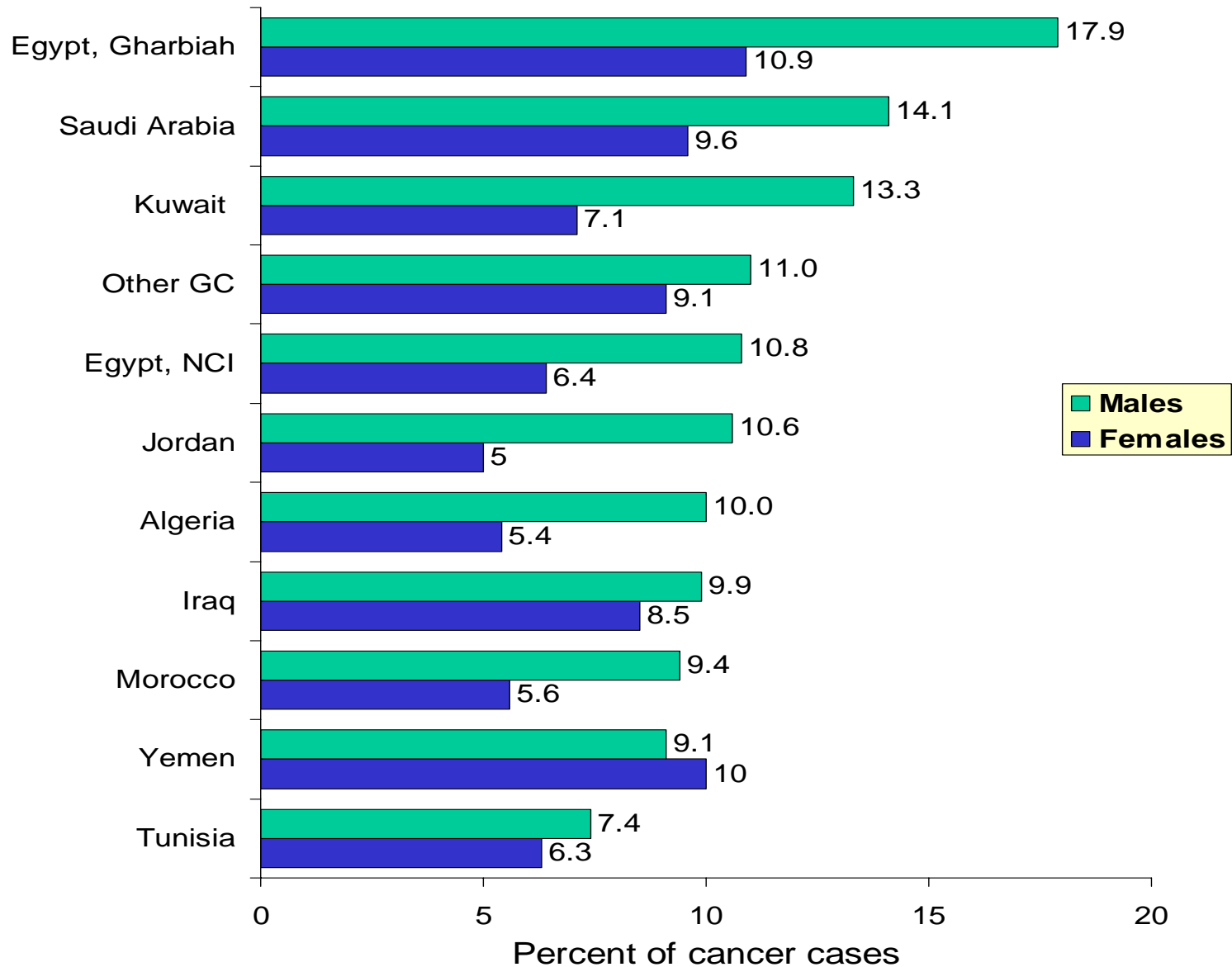
## Age of Uterine Cancer Cases in Selected Arab World

Country	Median (years)
Egypt (NCI)	60.0
Egypt (Gharbiah)	50.8
Saudi Arabia	59.1
Kuwait	52.0
Jordan	55.8

# Lymphoma and Leukemia Worldwide

- Lymphoma is the 8th most common cancer site for males and 9<sup>th</sup> for females. It accounts for 3.3% of all cancer worldwide.
- Leukemia is the 10th most common cancer site for males and 11th for females. It constitutes 2.8% of all cancer worldwide.

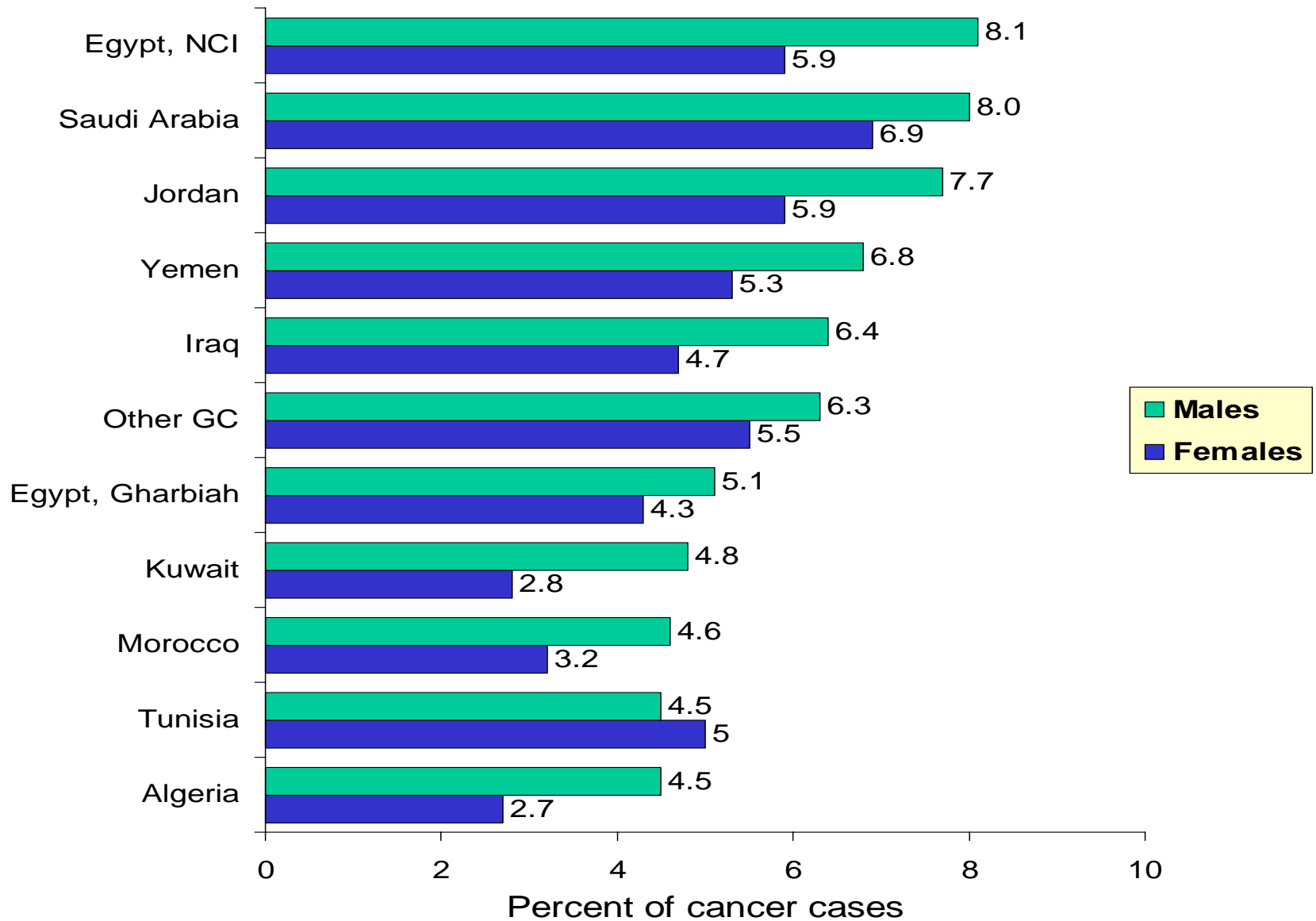
# Frequency of Lymphomas in Arab World



# Age of Lymphoma Male Cases in Selected Arab Countries

Country	Median (years)
Egypt (NCI)	38.0
Egypt (Gharbiah)	45.2
Saudi Arabia	44.2
Jordan	43.6
USA	60.0

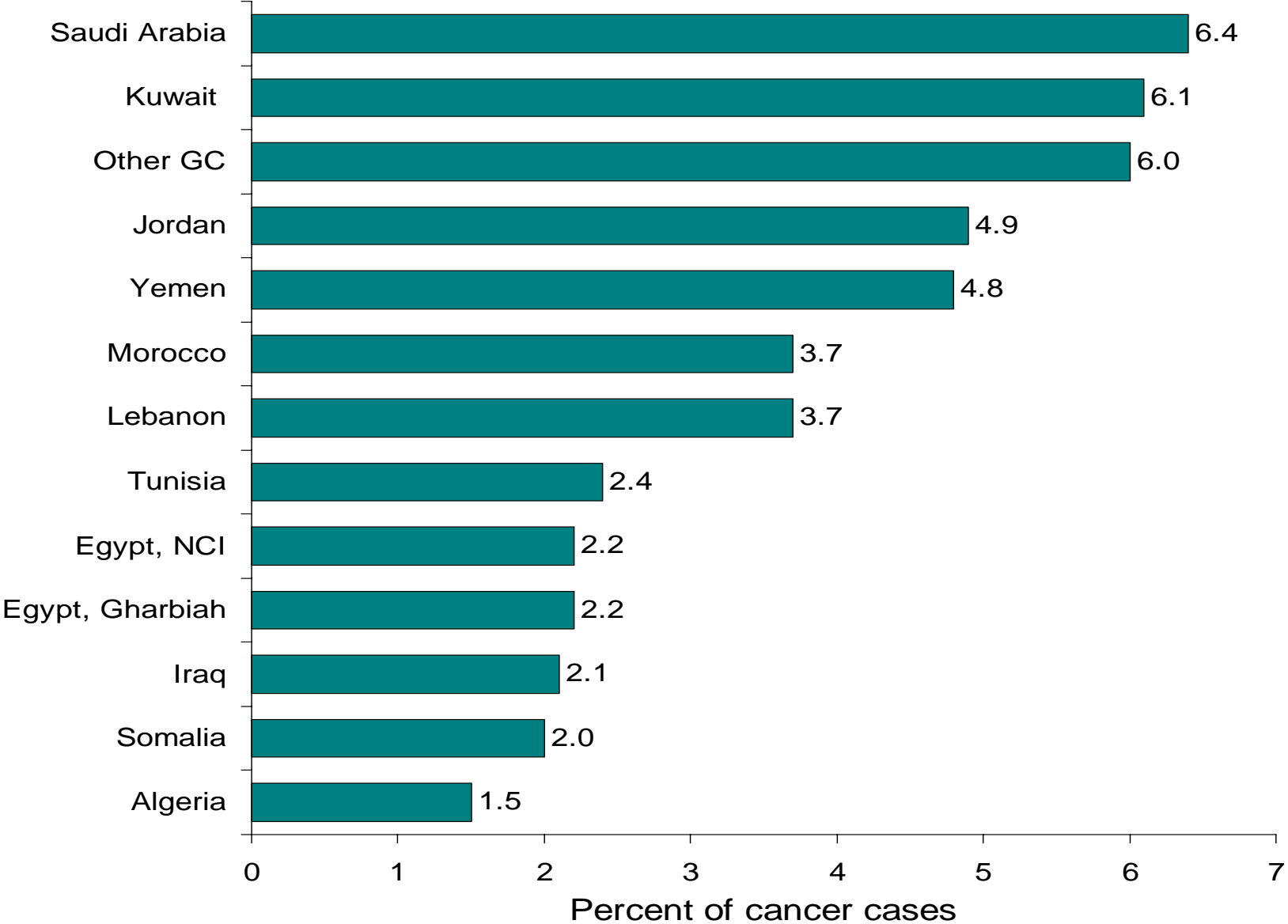
# Frequency of Leukemias in Arab World



# Age of Leukemia Male Cases in Selected Arab Countries

Country	Median (years)
Egypt (NCI)	19.0
Egypt (Gharbiah)	45.4
Saudi Arabia	19.1
Jordan	36.2

# Frequency of Thyroid Cancer in Arab World (Females)



## Most Common Cancer Sites in Selected Arab Countries, Males

Country	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>
Egypt	Bladder	Liver	NHL	Lung	Colorectal
Tunisia	Lung	Bladder	Prostate	Larynx	Colorectal
Algeria	Lung	Bladder	Stomach	Prostate	Colorectal
Jordan	Lung	Bladder	Prostate	NHL	Skin
KSA	NHL	Liver	Leukemia	Colorectal	Lung
Kuwait	Colorectal	NHL	Prostate	Lung	Liver
Lebanon	Bladder	Lung	Prostate	Colorectal	Stomach
Yemen	NHL	HD	Liver	Leukemia	Colorectal

## Most Common Cancer Sites in Selected Arab Countries, Females

Country	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>
Egypt	Breast	NHL	Leukemia	Liver	Colorectal
Tunisia	Breast	Cervix	Colorectal	Leukemia	NHL
Algeria	Breast	Cervix	Colorectal	Ovary	NHL
Jordan	Breast	Colorectal	Ovary	Thyroid	Skin
KSA	Breast	Thyroid	Leukemia	Colorectal	NHL
Kuwait	Breast	Colorectal	Thyroid	NHL	Cervix
Lebanon	Breast	Colorectal	Uterus	Ovary	Bladder
Somalia	Cervix	Breast	Liver	Ovary	Esophagus

# Cancer in Arab World

## Main conclusions

- **Lung**                      **High prevalence of smoking**
- **Liver**                      **Endemicity of hepatitis B & C**
- **Bladder**                      **Smoking, Schistosoma**
- **NHL**                      **Low SES, malnutrition, parasitic & viral infections (Epstein-Barr)**
- **Prostate**                      **Increasing with aging population**
- **Breast**                      **Leading cancer similar to developed countries, younger age at presentation**
- **Cervix**                      **High in Somalia & Algeria, 50% of cases are diagnosed in late stage**

Thank You